In the Claims

1. (Currently Amended) An optical signal coupling for two vehicles coupled with one another, especially rail vehicles coupled with one another, with a first coupling part directly fixed to one vehicle and a second coupling part directly fixed to the other vehicle, between which optical signals are transmitted, characterized in that the first coupling part contains a sending device which creates the optical signals to be transmitted, and the second coupling part contains a receiving device which detects the transmitted optical signals.

2. (Original) An optical signal coupling according to claim 1, wherein the first coupling part includes a microprocessor which controls the creation of the signals in the sending device.

3. (Original) An optical signal coupling according to claim 1, wherein the second coupling part includes a microprocessor which processes the signals detected in the receiving device.

4. (Original) An optical signal apparatus according to claim 2, wherein the microprocessor of the first coupling part is so programmed that it merges several individual signals into multiplexed signals and the microprocessor of the second coupling part is so programmed that it divides the multiplexed signals into several individual signals.

5. (Currently Amended) An optical signal coupling according to ~~claim1~~ claim 1, wherein the sending device has at least one LED for creating the optical signal.

6. (Original) An optical signal coupling according to claim 1, wherein the receiving device has a photo diode for detecting the optical signal.

7. (Original) An optical signal coupling according to claim 1, wherein each of the first and second coupling parts, is a light conducting element, of which elements one has a spherically concave end surface and the other has a spherically convex end surface with an identical radius of curvature and of which at least one is so elastically biased that the light conducting elements are pressed against one another with their end surfaces, when the two vehicles are coupled with one another.

8. (Original) An optical signal coupling according to claim 7, wherein each of the light conducting elements includes a light opaque sleeve and a transparent core received in the sleeve.

9. (Original) An optical signal coupling according to claim 8, wherein the wall thicknesses of the sleeves in the region of the end surfaces have a value equal to at least 1/10, and preferably of at least 1/5, of the radius of curvature of the end surfaces.

10. (Currently Amended) ~~An optical signal coupling according to claim 8, wherein the light opaque sleeves are electrically conducting and in that upon the pressing together of the end surfaces the light conducting elements of the first and second coupling parts establish an electrical contact between the associated sleeves through which electric signals from one coupling part can be transmitted to the other coupling part.~~ An optical signal coupling for two vehicles coupled with one another, especially rail vehicles coupled with one another, with a first coupling part fixed to one vehicle and a second coupling part fixed to the other vehicle, between which optical signals are transmitted, the first coupling part containing a sending device which creates the optical signals to be transmitted, and the second coupling part containing a receiving device which detects the transmitted optical signals;

the first and second coupling parts each being a light conducting element of which elements one has a spherically concave end surface and the other has a spherically convex end surface with an identical radius of curvature and of which at least one is so elastically biased that the light conducting elements are pressed against one another with their end surfaces when the two vehicles are coupled with one another, the light conducting elements each including a light opaque sleeve and a transparent core received in the sleeve, the light opaque sleeves being electrically conducting and in that upon the pressing together of the end surfaces the light conducting elements of the first and second coupling parts establish an electrical contact between the associated sleeves through which electric signals from one coupling part can be transmitted to the other coupling part.

11. (Original) An optical signal coupling according to claim 10, wherein the section of each sleeve which is part of the end surfaces is plated with hard gold.

12. (Original) An optical signal coupling according to claim 10, wherein at least a portion of the signal which is transmitted between the coupling parts as an optical signal is additionally transmitted through the sleeves of the two coupling parts as an electric signal.

13. (Original) An optical signal coupling according to claim 7, wherein each of the first and second coupling parts has a housing on one axial end of which a sleeve-like section is formed in which the light conducting element is axially slidably supported and is elastically biased in the direction toward the one axial end, and at the other end of which a connector pin is formed which is designed for placement in a contact carrier.

14. (Original) An optical signal coupling according to claim 10, wherein between the sleeve of the light conducting element and the sleeve-like section of the housing of each coupling part an electrical sliding contact exists through which electric signals are transmittable between the sleeve-like section and the sleeve.

15. (Original) An optical signal coupling according to claim 13, wherein the connection pin comprises two sections insulated from one another of which one is connected with ground potential and the other of which is connected with an electric signal conductor when the connecting pin is installed in the contact carrier.

16. (Original) An optical signal coupling according to claim 1, wherein the coupling parts are arranged in the coupling heads of a mechanical coupling for rail vehicles.

17. (Previously Presented) A conductive coupling for the connection of conductors of two rail vehicles couplable with one another, with two contact carriers each of which is connected to a respective one of the rail vehicles, wherein at least one signal coupling part with a sending device is arranged in one contact carrier and in that at least one signal coupling par with a receiving device is arranged in the other contact carrier which coupling parts together form an optical signal coupling according to claim 1.

18. (Previously Presented) A conductive coupling according to claim 17, wherein in each contact carrier is arranged both a signal coupling part with a sending device and a signal coupling part with a receiving device of which coupling parts together form two optical signal couplings.

19. (Original) A conductive coupling according to claim 18, wherein the sending device and the receiving device of the coupling parts of each contact carrier are connected with a common microprocessor which controls the generation of the signals in the sending device and processes signals detected in the receiving device.